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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference GW-SAR-9285-PCT | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416) | |
| International application No. PCT/GB 03/01005 | International filing date (day/month/year) 07.03.2003 | Priority date (day/month/year) 07.03.2002 |
| International Patent Classification (IPC) or both national classification and IPC H01B11/00 | | |
| Applicant HOWE, Eugene | | |

- This International preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 8 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 16 sheets.

- This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☒ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

| | |
|---|---|
| Date of submission of the demand 01.09.2003 | Date of completion of this report 12.08.2004 |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu'd Fax: +49 89 2399 - 4465 | Authorized Officer Weisser, W Telephone No. +49 89 2399-2613  |

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/GB 03/01005**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-26 as originally filed

Claims, Numbers

1-29, 33, 34, 36-44 as originally filed

Drawings, Sheets

1/16-16/16 received on 12.05.2003 with letter of 09.05.2003

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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EXAMINATION REPORT**

International application No. **PCT/GB 03/01005**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees, the applicant has:

- ☐ restricted the claims.
☐ paid additional fees.
☐ paid additional fees under protest.
☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
☒ not complied with for the following reasons:

see separate sheet

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
☐ the parts relating to claims Nos. .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|--|
| Novelty (N) | Yes: Claims | 4,6,7,10,19,21,22,26,29,34,40,43,44 |
| | No: Claims | 1-3,5,8,9,11-18,20,23-25,27,28,33,36-39,41,42 |
| Inventive step (IS) | Yes: Claims | 4,6,7,10,19,21,22,26,34,40,43,44 |
| | No: Claims | 1-3,5,8,9,11-18,20,23-25,27,28,29,33,36-39,41,42 |
| Industrial applicability (IA) | Yes: Claims | 1-29,33,34,36-44 |
| | No: Claims | - |

2. Citations and explanations

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EXAMINATION REPORT**

International application No. **PCT/GB 03/01005**

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/01005

1. In this IPER the following documents will be referred to:

D1: WO-01/54139
D2: US-6297454B
D3: WO-00/49683
D4: EP-0755100

2. Clarity (Art.6 PCT)

In the numbering of the set of claims numbers 30-32 and 35 have been left out.

In claim 2 the term "the required distance" is not clear.

In claim 8 it is not clear which feature of the cable should be defined by the term "location points".

In claim 22 it is not clear whereto the term "degree of difference" relates.

In claim 23 it is not clear how the term "density" should be understood, i.e. whereto it relates.

In claim 24 it is referred to "the elongated member passage" which has however not been defined in the previous claims to which claim 24 refers.

In claim 27 it is not clear which feature of the cable should be defined by the term "carries services", i.e. what has to be understood by the term "services".

In claims 28 and 37 it is not clear which specific features of the plug (claim 28) and the socket (claim 37) is sought to be defined by the wording "for use with a cable of the type described in the preceding claims".

In claim 37 the term "the angular spacing" is not clear without having defined the geometrical arrangement (circular arrangement?) of the reception means.

In claim 42 the wording "if required to improve the performance of the cable" renders unclear whether the method steps defined on line 1-6 of page 32 are obligatory or only optional. In the following the latter is assumed.

Further, the vague and ambiguous terms "required spacing" and "on the basis" render the method steps defined on line 1-6 of page 32 unclear.

On page 26, last but one paragraph of the description the wording "preferably all" renders unclear whether the described multi conductor cables comprise any of the conductor cables in accordance with the invention. It thereby leads to doubt concerning the matter for which protection is sought.

3. Lack of unity of invention (Rule 13.1 PCT)

In view of the lack of clarity of claims 28, 37 and 42 (cf. item 2 above) it can not be clearly decided whether or not said claims lack unity of invention with claims 1 and 11.

As far as these claims are understood, it however appears that at least claims 28 and 37 lack unity of invention with claims 1 and 11 for the following reasons:

Claims 28 and 37 and claims 1 and 11 appear to be related to each other only by the wording "(plug/socket) for use with a cable of the type described in the preceding claims". A plug and a socket being suitable for use with a cable of the type defined in present claim 1 appears however to be known in the art, e.g. from D3 and D4 (cf. item 4.4 below).

The common technical concept linking together claims 1 and 11 and claims 28 and 37 therefore appears not to be new and inventive as required by Rule 13.2 PCT and the set of claims thus appears to lack unity (Rule 13.1 PCT; non-unity a posteriori).

4. Novelty (Art. 33.2 PCT)

4.1 D1 (cf. p.8, line 16 - p.9, line 22; Fig.5-7) discloses a data cable comprising four conductor sets, provided straight along the cable, each of said conductor sets including two twisted conductors and being spaced apart by an elongated member (20). At least two conductor sets (e.g. the opposing ones) are spaced apart by a distance of at least 1mm (cf. page 9, line 11-12). E.g. for the diameter 8.89mm (0.350in) of the "channel filler" (20) and any diameter of the indicated range (0.050in-0.120in) of the "channel pockets" (52, 53) the distance of radially opposing conductor sets is at least 2.8mm and the distance between not radially opposing conductor sets is at least 1.08mm (as can be easily calculated).

The subject matter of claims 1 and 11 is therefore not new (Art. 33.2 PCT).

As the method steps on line 1-6 on page 32 appears to be only optional (cf. item 2 above) the subject matter of present claim 42 is also not new with regard to D1 (Art. 33.2 PCT).

4.2 The subject matter of dependent claims 2, 3, 5, 8, 9, 12-18, 20, 23-25 and 27 appear also not to be new with regard to D1, as far as these claims can be understood, for the following reasons:

- claims 2, 3, 14, 17: cf. argument in item 3.1
- claims 5, 13: the conductor sets are housed in passages of the elongated member, thereby running on the outside surface of said member
- claim 9: conductor sets 52 are provided with a long lay, conductor sets 53 with a short lay
- claims 12, 15, 16, 20, 24, 25: cf. e.g. Figs.5-7
- claim 18: the elongated member 20 appears to have the form of a tube
- claims 8, 23, 27: apparently disclosed in D1 (as far as these claims are understood)

4.3 The subject matter of present claims 1-3, 5, 11-17, 20, 24, 25 and 42 is also not new with regard to D2 (cf. col.2, line 43 - col.3, line 22; Figs. 3.7) (Art. 33.2 PCT).

4.4 D3 (cf. page 8, line 8-14; page 12, line 17 - page 13, line 16; Figs.11,12,13,14) discloses a plug for a cable with four twisted pairs of conductors, said plug having a body (cf. Fig.11) arranged for location within a socket (cf. Fig.12) and wherein said plug has reception means for the connection of a plurality of spaced conductor sets, said reception means being spaced apart on the plug body (cf. Figs.11,13,14).

The socket shown in Fig.12 (in connection with the plug) has a port for reception of the plug shown in Fig.11, said socket having reception means (45) for the connection of said plurality of spaced conductor sets, said reception means being (apparently) spaced apart at the socket port.

D4 (cf. p.3, line 56 - p.4, line 9; p.5, line 27 - p.6, line 4; Fig.6-10) discloses a plug and a socket for use with a multi-pair conductor cable, said plug having a body arranged for location within the socket and said socket having a port for reception of the plug (cf. e.g. Figs.6,7,9), wherein each of said plug and said socket has reception means for the connection of a plurality of spaced conductor sets, said reception means being spaced apart on the plug body and the socket port respectively (cf. Figs.6,7, view B-B).

Said plugs and sockets of D3 and D4 are apparently also suitable for use of a cable of the type defined in claim 1.

The subject matter of claims 28 and 37 is therefore not new (Art. 33.2 PCT) with regard to any of D3 and D4.

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International application No. PCT/GB 03/01005

4.5 The subject matter of dependent claims 33, 36, 38, 39 and 41 is apparently also not new with regard to D3 and D4:

- claims 33, 39: cf. D3, Fig.12; D4, Figs.6-10
- claims 36, 41: cf. D3, Figs.11,12
- claim 38: the reception means have an angular spacing of 90degree (=360degree divided by the number of reception means)

5. Inventive step (Art. 33.3 PCT)

The subject matter of claim 29 appears not to be inventive (Art. 33.3 PCT), since it appears not to involve an inventive step to chose the spacing between the conductor set reception means in D4 (cf. Fig.6, view B-B) to have at least 1mm.

5.1 The subject matter of claims 4,6,7,10,19,21,22,26,34,40,43 and 44 appears, as far as said claims can be understood (cf. item 2 above), to be inventive (Art. 33.3 PCT).

6. Industrial applicability (Art. 33.4 PCT)

The subject matter of the present set of claims (claims 1-29, 33, 34 and 36-44) appears to be industrially applicable (Art. 33.4 PCT).

* * * * *

12 MAY 2003

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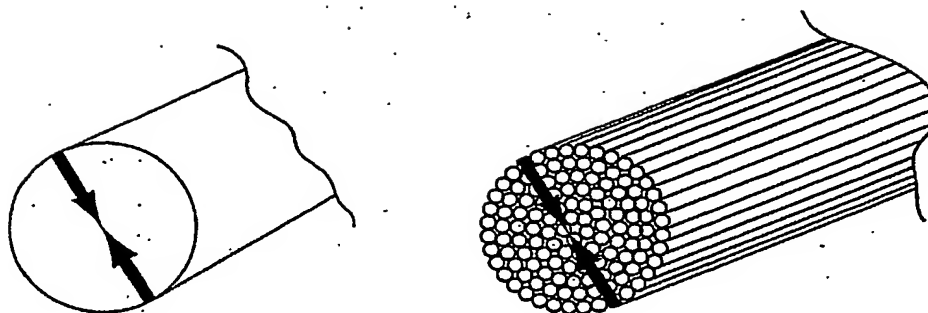


FIG. A

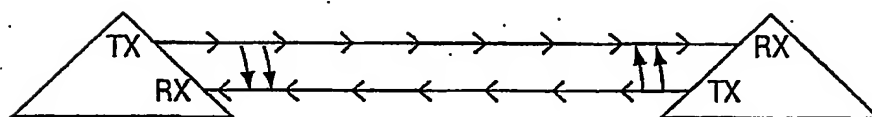


FIG. B

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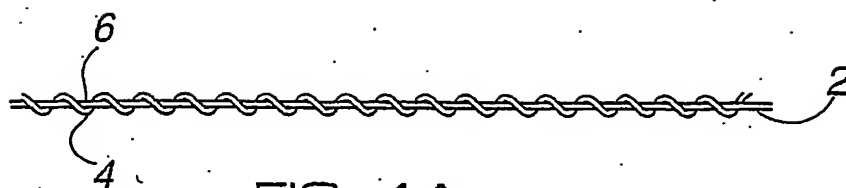


FIG. 1A

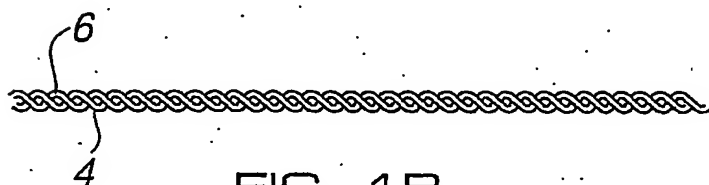


FIG. 1B

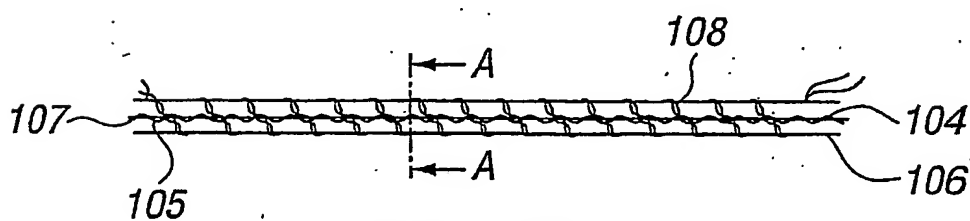


FIG. 2A

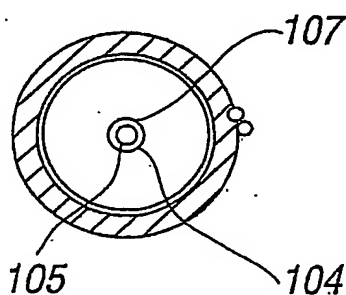
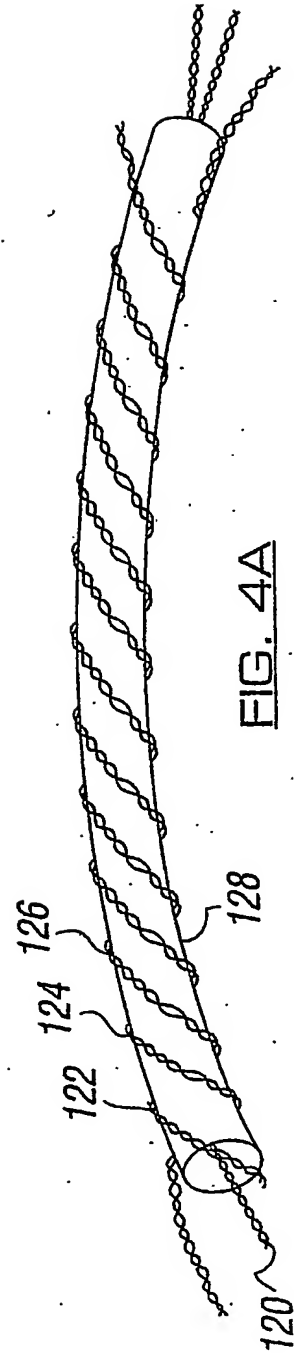
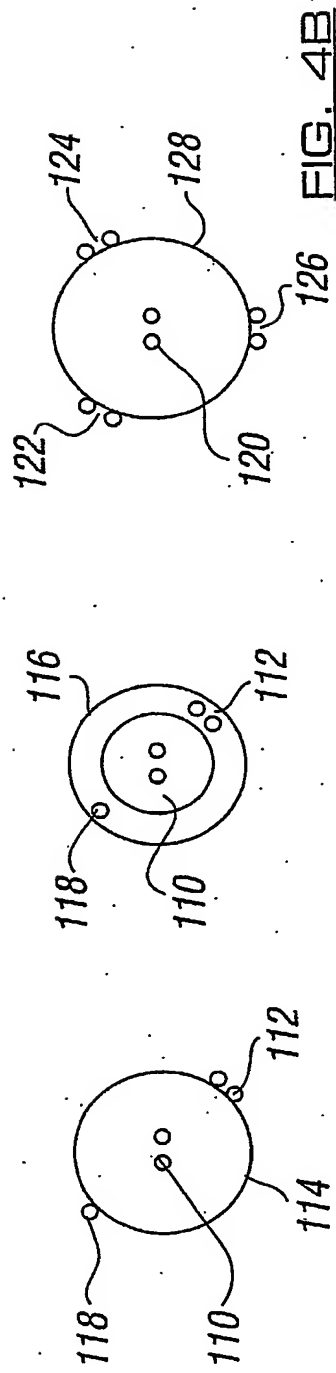
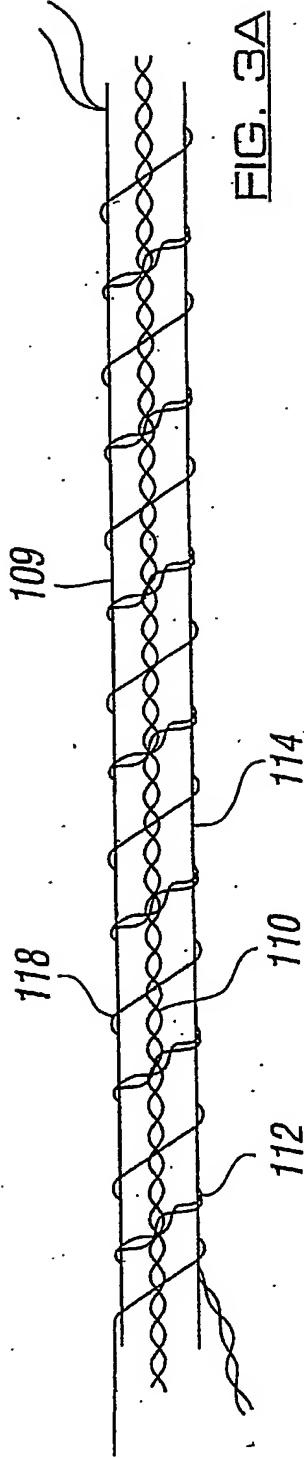


FIG. 2B



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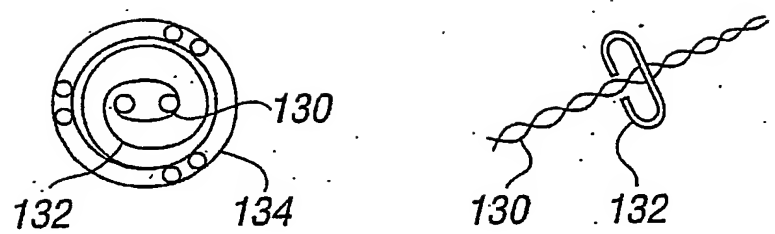


FIG. 5A

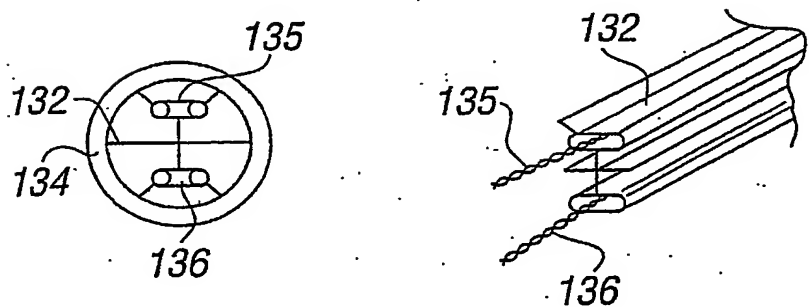


FIG. 5B

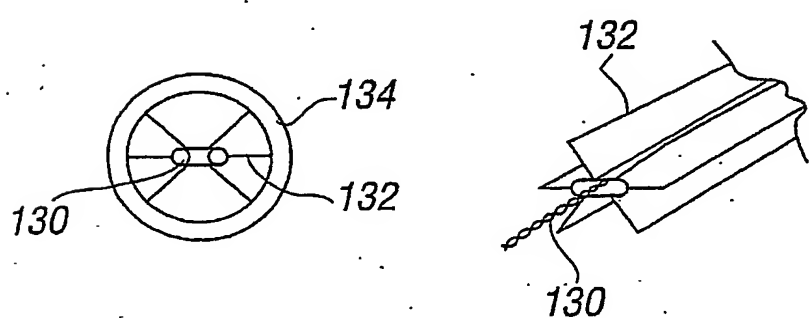
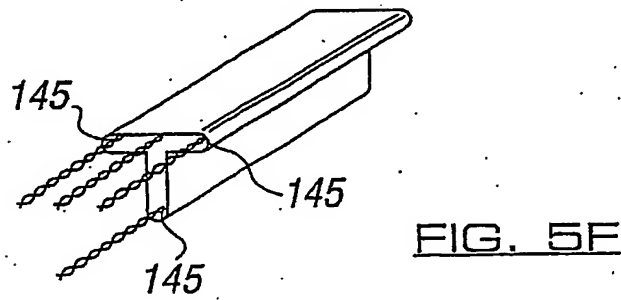
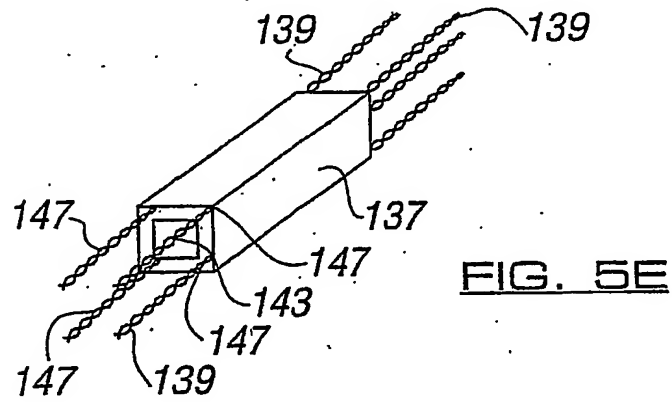
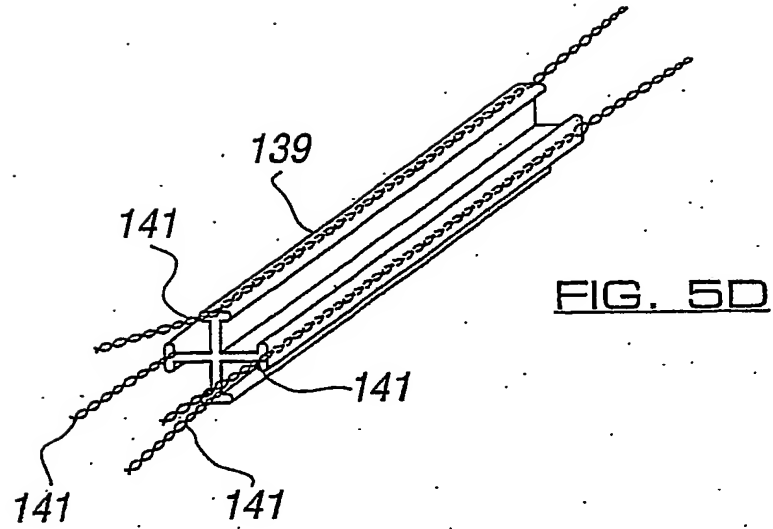


FIG. 5C

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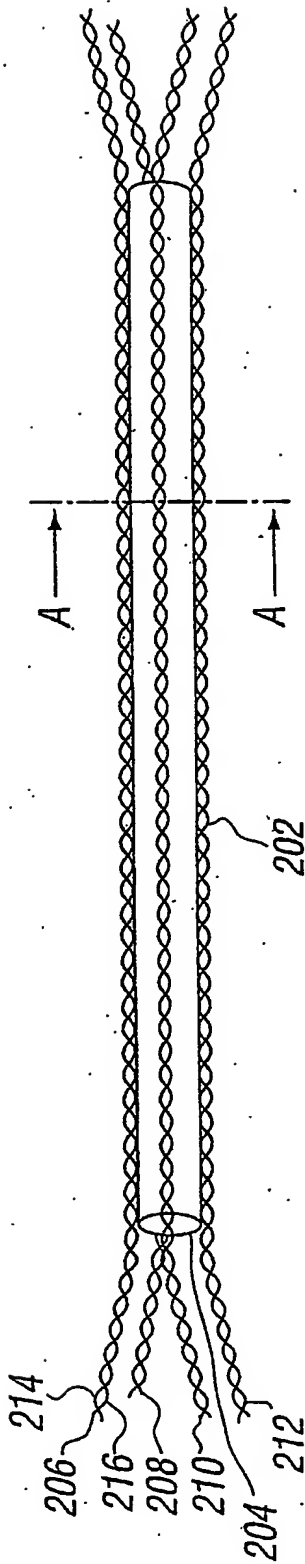


FIG. 6

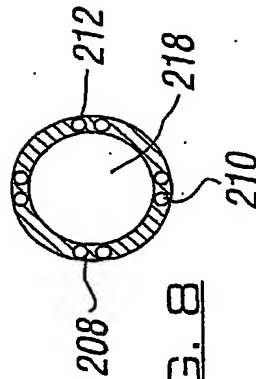


FIG. 8

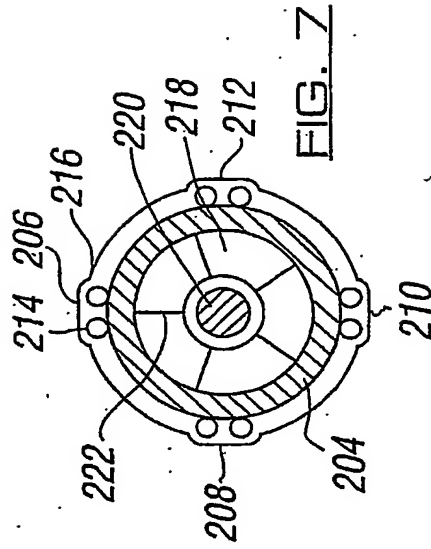


FIG. 7

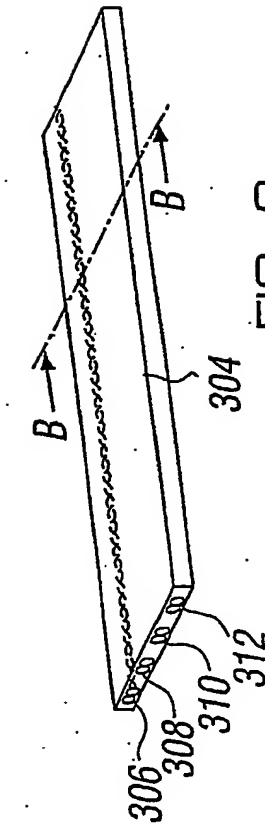


FIG. 9

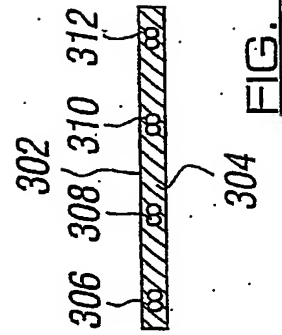
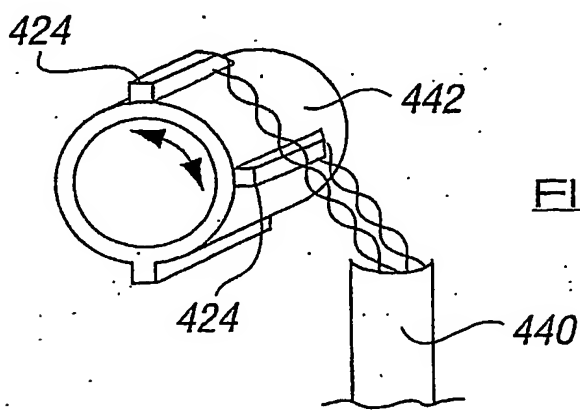
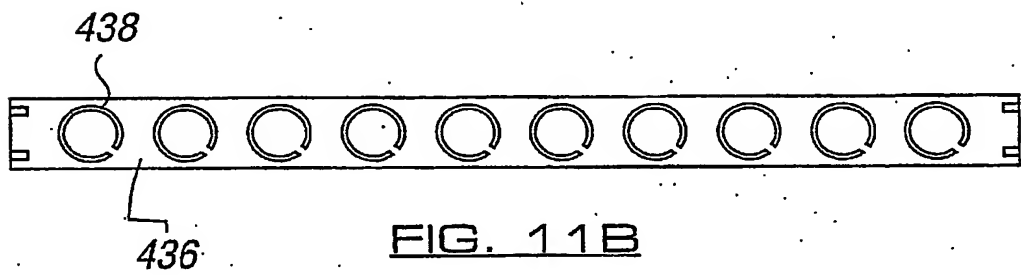
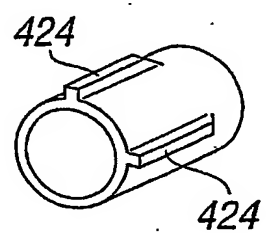
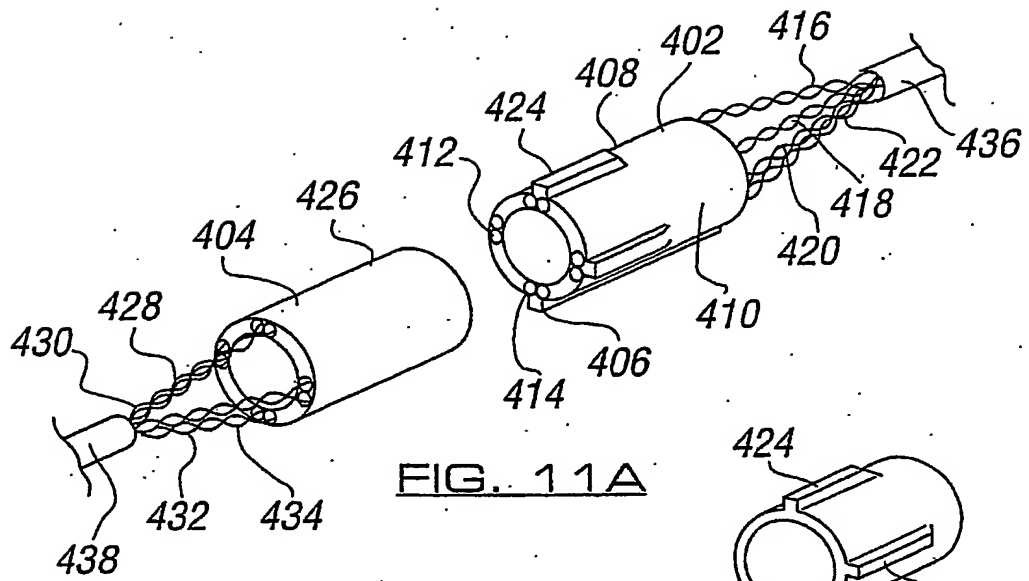


FIG. 16

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